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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,079	09/25/2003	Juan Diaz	60046.0051US01	5823

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EXAMINER	
URICK, MATTHEW T	

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,079	DIAZ ET AL.	
	Examiner	Art Unit	
	Matt Urick	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Non-Final Official Action

Status of the Claims

Claims 1-21 are rejected under 35 USC 103.

Claims 3-20 are objected to due to minor informalities.

Claim Objections

Claims 3-20 are objected to because of the following informalities: Two claims are listed as claim number 3. All claims after the third claim have been incremented and will be referred to as such for this office action. Appropriate correction is required.

Claim 5 is objected to because of the following informalities: Claim 5 is dependant on claim 3, but two claims are listed as claim 3. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 12-14, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (United States Patent Application Publication 2003/0126511 A1) in view of Cortopassi (United States Patent No. 6,018,806).

As per claim 1, Yang discloses:

A computer program product readable by a computing system and encoding a computer program of instructions, the computer program product comprising:

A [hardware protected] region storing a portion of a computer basic input/output system comprising a compressed computer program operative to restore a portion of the computer basic input/output system when uncompressed and executed (¶ 19 lines 6-17: POST module 18); and

A [non-protected] region storing the remainder of the computer basic input/output system (¶ 18 lines 1-3: boot block 12).

Yang does not disclose:

A hardware protected region storing the compressed computer program and

A non-protected region storing the remainder of the computer basic input/output system.

Cortopassi discloses a system in which a recovery program is stored in a protected sector of flash memory to restore the non-protected memory in case it becomes corrupted. The recovery program is stored in the protected region to ensure that it is not accidentally affected by any reprogramming (column 38 lines 49-55). Cortopassi discloses that this enables the system to recover from incorrect or

interrupted programming caused by a user to other external error (column 1 lines 47-55). Yang discloses that reprogramming or attempting to correct the BIOS section of a computer is difficult and confusing to many users (¶ 7). Yang also discloses using protected memory for certain segments of the BIOS (¶ 18). Storing the recovery program in a protected region of the memory would prevent the users from accidental reprogramming mistakes, and allow the recovery program to execute reliably. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a hardware protected region for storing a restoration program into the system of Yang, to increase the reliability of the program, and to prevent any programming mistakes during recovery.

As per claim 2, Yang discloses:

The computer program product of claim 1, wherein the portion of the computer basic input/output system stored within the hardware protected region further comprises an uncompressed computer program operative to uncompress the compressed computer program (¶ 19 decompress module 16).

As per claim 3, Yang discloses:

The computer program product of claim 2, wherein the uncompressed computer program is operative to uncompress the compressed computer program in response to determining that a portion of the basic input/output system stored within the non-protected region is invalid (¶ 20 automatic restoring module 20).

As per claim 4, Yang discloses:

The computer program product of claim 2, wherein the portion of the computer basic input/output system stored in the protected region further comprises an uncompressed computer program for detecting and initializing one or more random access memory devices within the computing system (¶ 2 lines 6-12, last 6 lines: BIOS always detects and initializes RAM as well as all hardware on the computer).

As per claim 5, Yang discloses:

The computer program product of claim 4, wherein restoring the portion of the computer basic input/output system stored in the non-protected region comprises replacing the portion of the computer basic input/output system stored in the non-protected region with a computer basic input/output system stored on a mass storage device (¶ 17 last 5 lines).

As per claim 6, Yang discloses:

A method for utilizing program code stored in a hardware protected region of a memory device of a computing system, the method comprising:

Storing within the [hardware protected] a portion of a computer basic input/output system comprising a recovery computer program operative to restore a portion of the computer basic input/output system when uncompressed and executed,

the recovery program being stored in a compressed format (¶ 19 lines 6-17: POST module 18); and

storing within the hardware protected region a decompression computer program operative to uncompress the compress a compressed computer program when executed, the decompression computer program being stored in a uncompressed format (¶ 19 decompress module 16); and

storing within the hardware protected region a memory initialization computer program for detecting and initializing one or more random access memory devices within the computing system, the memory initialization computer program stored in an uncompressed format (¶ 2 lines 6-12, last 6 lines: BIOS always detects and initializes RAM as well as all hardware on the computer).

As per claim 12, Yang discloses:

A computer-readable media comprising computer-executable instructions which, when executed by a computer, cause the computer to perform the method of Claim 6 (¶ 17 lines 1-6).

As per claim 13, Yang discloses:

A computer controlled apparatus operative to perform the method of claim 6 (¶ 17 lines 1-6)

As per claim 14, Yang discloses:

A method for utilizing compressed program code stored in a hardware protected region of a memory device of a computing system, the method comprising:

generating a first executable computer program code segment (¶ 19 lines 3-6: POST module is stored in program module 14);

compressing the first executable computer program code segment (¶ 19 lines 6-17: POST module is compressed);

converting the compressed first executable computer program code segment to a raw data format (¶ 19 wherein program module 14 is a raw data format);

generating a second executable computer program code segment, the second executable program code segment operative to uncompress the compressed first executable computer program code segment (¶ 19 decompress module 16);

converting the second executable computer program code segment to a raw data format (¶ 19 wherein program module 14 is a raw data format);

generating a third executable computer program code segment, the third executable computer program code segment including the converted raw data for the first executable code segment and the converted raw data for the second executable program code segment (¶ 19 program module 14 is the third code segment); and

Yang does not disclose:

storing the third executable computer program code segment in the hardware protected region of the memory device.

Cortopassi discloses a system in which a recovery program is stored in a protected sector of flash memory to restore the non-protected memory in case it

becomes corrupted. The recovery program is stored in the protected region to ensure that it is not accidentally affected by any reprogramming (column 38 lines 49-55). Cortopassi discloses that this enables the system to recover from incorrect or interrupted programming caused by a user to other external error (column 1 lines 47-55). Yang discloses that reprogramming or attempting to correct the BIOS section of a computer is difficult and confusing to many users (¶ 7). Yang also discloses using protected memory for certain segments of the BIOS (¶ 18). Storing the recovery program in a protected region of the memory would prevent the users from accidental reprogramming mistakes, and allow the recovery program to execute reliably. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a hardware protected region for storing a restoration program into the system of Yang, to increase the reliability of the program, and to prevent any programming mistakes during recovery.

As per claim 20, Yang discloses:

A computer-readable media comprising computer-executable instructions which, when executed by a computer, cause the computer to perform the method of Claim 14 (¶ 17 lines 1-6).

As per claim 21, Yang discloses:

A computer-controlled apparatus operative to perform the method of Claim 14 (¶ 17 lines 1-6).

Claims 7-11 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (United States Patent Application Publication 2003/0126511 A1) in view of Cortopassi (United States Patent No. 6,018,806) as applied above, and in further view of Null ("The Essentials of Computer Organization and Architecture").

As per claim 7, Yang discloses:

Upon an initial program load of the computing system, executing the memory initialization computer program to detect and initialize one or more random access memory devices within the computing system (¶ 2 lines 6-12, last 6 lines: BIOS always detects and initializes RAM as well as all hardware on the computer); and

Yang and Cortopassi fail to disclose:

Copying the decompression computer program to a memory area provided by the one or more random access memory devices.

Null discloses that all computing systems in the art utilize several types of memory. Typically, random access memory (RAM) stores programs and program data that are critical to program execution (page 234 ¶ 1, lines 7-8). However, since RAM is volatile, the computer stores some critical information, including boot information, in a nonvolatile storage (page 234 ¶ 3 lines 1-2) and loads them into RAM when necessary for execution, since RAM can operate faster. Yang's system uses BIOS information to boot the computer at startup (Yang ¶ 1), as does Cortopassi (column 1 lines 46-60). Loading the decompression program into RAM would be essential to enable the computer to load and execute the boot process, since the RAM is the main memory

used by the computer to process instructions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to copy the computer program into the random access memory into the system of Yang, to enable the computing system to execute the boot process, as well as any other functions essential to operation.

As per claim 8, Yang and Cortopassi fail to disclose:

The method of claim 7, further comprising:

Executing the decompression computer program to decompress the recovery computer program to a memory area provided by the one or more random access memory devices.

Null discloses that all computing systems in the art utilize several types of memory. Typically, random access memory (RAM) stores programs and program data that are critical to program execution (page 234 ¶ 1, lines 7-8). However, since RAM is volatile, the computer stores some critical information, including boot information, in a nonvolatile storage (page 234 ¶ 3 lines 1-2) and loads them into RAM when necessary for execution, since RAM can operate faster. Yang's system uses BIOS information to boot the computer at startup (Yang ¶ 1), as does Cortopassi (column 1 lines 46-60). Loading the decompression program into RAM would be essential to enable the computer to load and execute the boot process, since the RAM is the main memory used by the computer to process instructions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to copy the computer program into

the random access memory into the system of Yang, to enable the computing system to execute the boot process, as well as any other functions essential to operation.

As per claim 9, Yang discloses:

The method of Claim 8, further comprising:

storing within a non-hardware protected region of the memory device a second portion of the computer basic input/output system, the second portion of the computer basic input/output system stored in a compressed format (¶ 19 last 4 lines: run-time module is stored in compressed format -- ¶ 18 last 5 lines: in a section that is not hardware protected); and

executing the recovery program [from the memory area] to determine whether the portion of the computer basic input/output system stored in the non-hardware protected region of the memory device is valid (¶ 25 lines 14-15).

Yang and Cortopassi do not disclose:

[executing the recovery program] from the memory area

Null discloses that all computing systems in the art utilize several types of memory. Typically, random access memory (RAM) stores programs and program data that are critical to program execution (page 234 ¶ 1, lines 7-8). However, since RAM is volatile, the computer stores some critical information, including boot information, in a nonvolatile storage (page 234 ¶ 3 lines 1-2) and loads them into RAM when necessary

for execution, since RAM can operate faster. Yang's system uses BIOS information to boot the computer at startup (Yang ¶ 1), as does Cortopassi (column 1 lines 46-60). Loading the decompression program into RAM would be essential to enable the computer to load and execute the boot process, since the RAM is the main memory used by the computer to process instructions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to copy the computer program into the random access memory into the system of Yang, to enable the computing system to execute the boot process, as well as any other functions essential to operation.

As per claim 10, Yang discloses:

The method of Claim 9, further comprising:

in response to determining that the portion of the computer basic input/output system stored in the non-hardware protected region of the memory device is valid, executing the decompression computer program to decompress the portion of the basic input/output system stored in the non-hardware protected region to a memory area provided by the one or more random access memory devices (¶ 25 lines 14-18: the run-time module is decompressed and the system is rebooted if there is an error); and

executing the uncompressed portion of the basic input/output system stored in the non-hardware protected region from the memory area (¶ 19 last 4 lines: run-time module may run when decompressed).

As per claim 11, Yang discloses:

The method of Claim 9, further comprising:

in response to determining that the portion of the computer basic input/output system stored in the non-hardware protected region of the memory device is invalid, executing the recovery computer program from the memory area to restore the portion of the computer basic input/output system stored in the non-hardware protected region (¶ 25 line 16 - ¶ 26 line 3: the automatic restoration module is run if there is an error in the run-time module).

As per claim 15, Yang discloses:

The method of Claim 14, further comprising:

executing the second executable computer program segment to decompress the first executable computer program code segment from the third executable program code segment (¶ 19)

Yang and Cortpoassi fail to disclose:

executing the third executable computer program code segment from the memory device, including copying the second executable computer program segment from the third executable computer program code segment to one or more random access memory devices of the computing system, and

[executing the second executable computer program segment to decompress the first executable computer program code segment from the third executable program

code segment] to a memory area provided by the one or more random access memory devices.

Null discloses that all computing systems in the art utilize several types of memory. Typically, random access memory (RAM) stores programs and program data that are critical to program execution (page 234 ¶ 1, lines 7-8). However, since RAM is volatile, the computer stores some critical information, including boot information, in a nonvolatile storage (page 234 ¶ 3 lines 1-2) and loads them into RAM when necessary for execution, since RAM can operate faster. Yang's system uses BIOS information to boot the computer at startup (Yang ¶ 1), as does Cortopassi (column 1 lines 46-60). Loading the decompression program into RAM would be essential to enable the computer to load and execute the boot process, since the RAM is the main memory used by the computer to process instructions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to copy the computer program into the random access memory into the system of Yang, to enable the computing system to execute the boot process, as well as any other functions essential to operation.

As per claim 16, Yang discloses:

The method of Claim 15, further comprising:

executing the first executable program code segment from the memory area to determine whether a portion of the computer basic input/output system stored in the non-hardware protected region of the memory device is valid (¶ 25 lines 14-15).

As per claim 17, Yang discloses:

The method of Claim 16, further comprising:

in response to determining that the portion of the computer basic input/output system stored in the non-hardware protected region of the memory device is valid, executing the second executable program code segment to decompress the portion of the basic input/output system stored in the non-hardware protected region to a memory area provided by the one or more random access memory devices (¶ 25 lines 14-18: the run-time module is decompressed and the system is rebooted if there is an error); and

executing the uncompressed portion of the basic input/output system stored in the non-hardware protected region from the memory area (¶ 19 last 4 lines: POST program may run when decompressed).

As per claim 18, Yang discloses:

The method of Claim 16, further comprising:

in response to determining that the portion of the computer basic input/output system stored in the non-hardware protected region of the memory device is invalid, executing the second executable program code segment from the memory area to restore the portion of the computer basic input/output system stored in the non-hardware protected region (¶ 25 line 16 - ¶ 26 line 3: the automatic restoration module is run if there is an error in the run-time module).

As per claim 19, Yang discloses:

The method of Claim 18, further comprising:

executing the second executable program code segment to decompress the restored portion of the basic input/output system stored in the non-hardware protected region to a memory area provided by the one or more random access memory devices (¶ 26 lines 1-7), and

executing the uncompressed portion of the basic input/output system stored in the non-hardware protected region from the memory area (¶ 26 last 4 lines).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt Urick whose telephone number is (571) 272-0805. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MTR

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Bryce P. Bonzo

BRYCE P. BONZO
PRIMARY EXAMINER